

The City of Boulder Story: Thousand Cankers Disease Management from a Municipal Perspective



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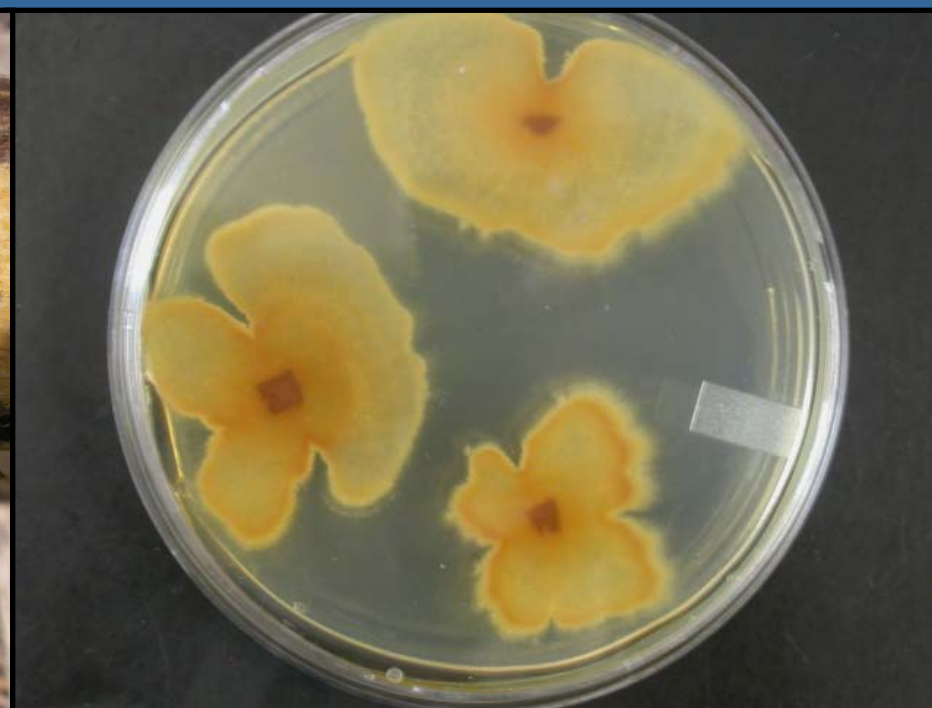
Annual Tree Health Survey

- Staff conducts annual city-wide survey of both public and private trees
- Prompted by resurgence of Dutch elm disease in 1997
- Parameters increased to include other insect and disease issues

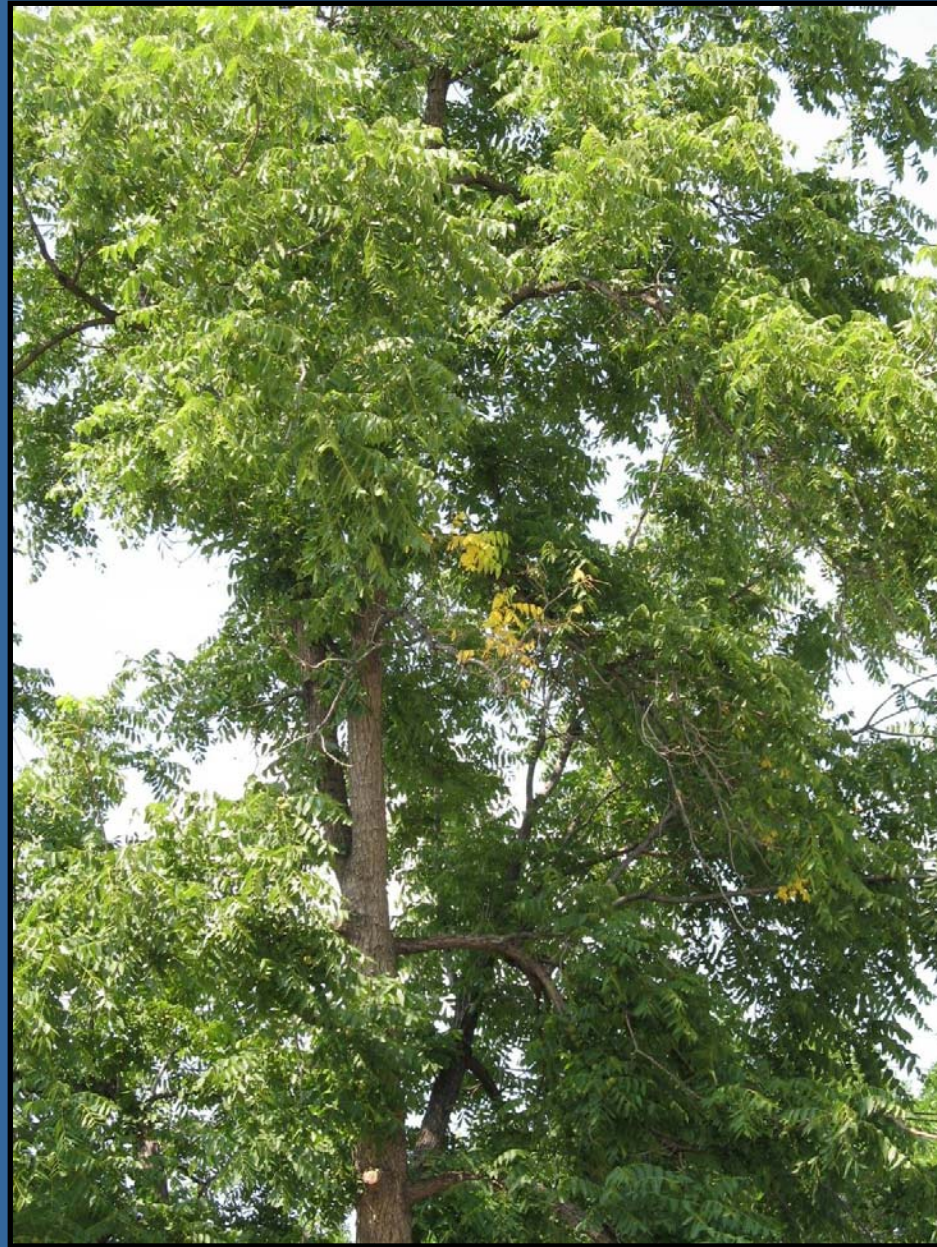






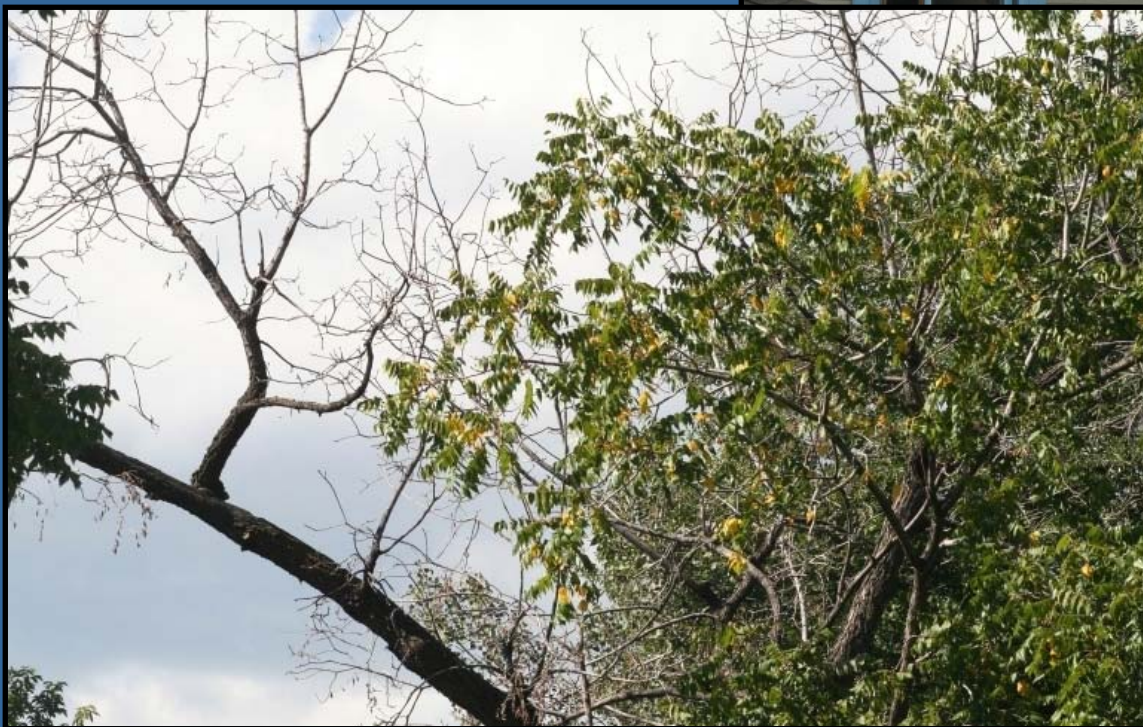
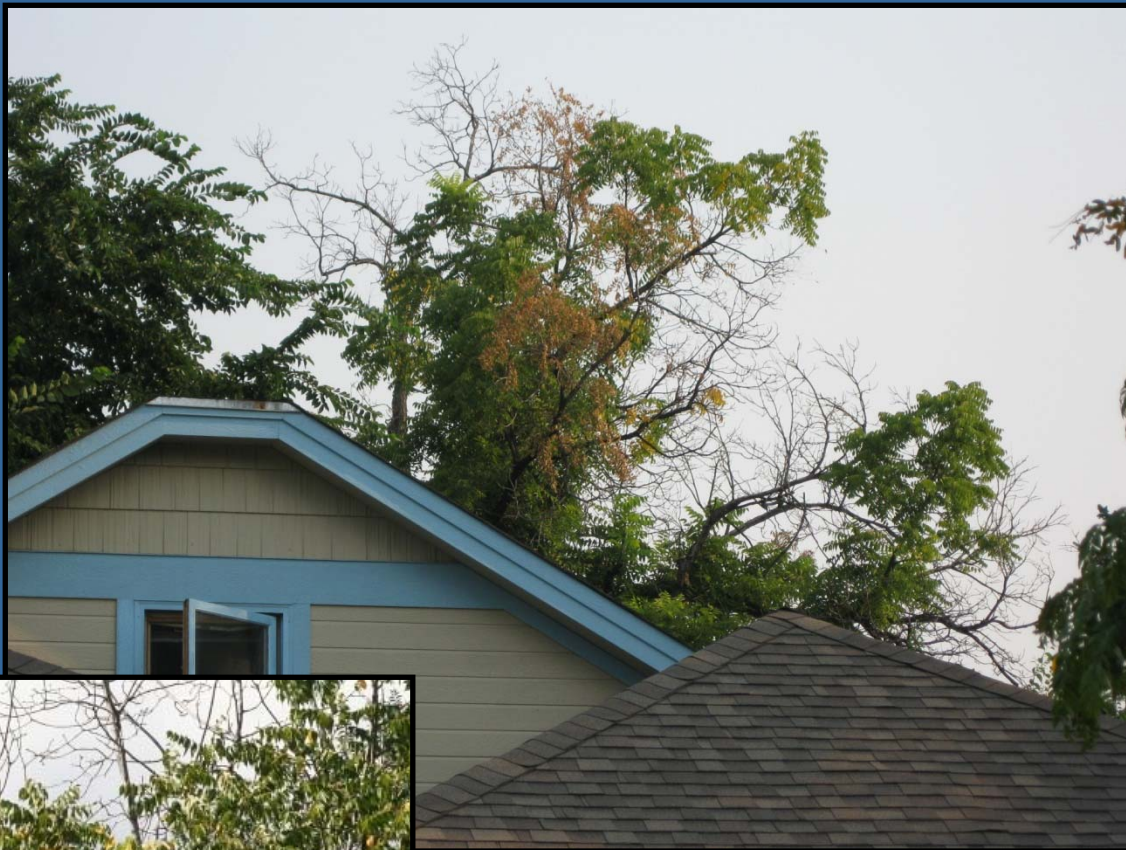


Progression of Symptoms





- Symptoms often progress from top of tree downward
- Wilting foliage
- Yellowing foliage
- Brown leaves often remain attached to twigs





- Larger deadwood
- Wilting / yellowing foliage throughout the crown
- Remaining crown much thinner









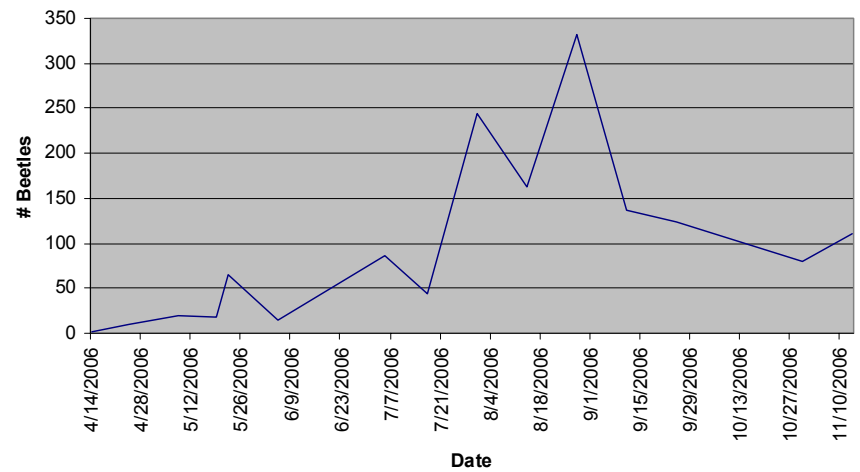
- Root system still alive so trees may resprout
- Progression of symptoms may occur within 1 year



What Did We Do About it ?



2006 Walnut Twig Beetle Sticky Trap Trial



Parks & Recreation - Walnut Trees - Frequently Asked Questions - Windows Internet Explorer

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Thousand Cankers Disease of Walnut Trees

Frequently Asked Questions

What does a walnut tree look like?

- **Leaves:** The long leaves of the black walnut are arranged alternately on the stem, have 11 to 23 leaflets per leaf and emerge later in spring than most other trees. Each leaflet has fine serrations on its margin, and the terminal leaflet at the end of the long leaf is frequently absent on leaves from mature trees. While most parts of this tree are pungent when rubbed or bruised, its leaves are especially so; crushed leaflets and stems have a distinct odor similar to turpentine.
- **Fruit:** The fruit ripens in fall into a dark brown nut with a brownish-green, semi-fleshy husk. The whole fruit, including the husk, falls in October; the seed is relatively small and very hard.
- **Bark:** The bark of the black walnut is flaky when young, but becomes ridged and deeply furrowed with age, forming a diamondback pattern as the ridges interlace. Bark color is gray-black.
- **Twigs and Buds:** The dormant twig of the black walnut is characterized by being stout, having large leaf scars without hairy twigs, and with a prominent terminal bud.

What is killing the walnut trees in Boulder?

There are a significant number of black walnut trees, dead and/or dying around Boulder. The rapid decline and tree mortality is the result of the walnut twig beetle (*Pityophthorus juglandis*) and a *Geosmithia* fungus. This previously unidentified beetle/fungus combination on black walnut trees has now officially been named, "Thousand Cankers Disease" by staff at Colorado State University (CSU).



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Tree Protection Ordinance

Boulder Revised Code

“Removal of Dead, Diseased or Dangerous Trees”

- (a) The city manager may enter upon any premises without a warrant to inspect all trees and plants in the city.
- (b) If the city manager finds that there exist on any private property in the city dead trees or overhanging limbs that pose a danger to persons or property, the manager will notify the owner, lessee, agent, occupant, or other person in possession or control of the property upon which the condition exists of the duty to remedy the condition within fifteen days from the date of the notice or such shorter time as the manager finds appropriate in view of the nature and extent of the condition.
- (c) If the city manager determines that any tree growing on private property within the city is afflicted with **any dangerous or infectious insect infestation or disease**, the manager will notify the owner, lessee, agent, occupant or other person in possession and control of the property of the condition and order such person to take specific prescribed measures that the manager determines are reasonably necessary to cure the infestation or disease and to prevent its spread, **within fifteen days** from the date of the notice or such time as the manager finds appropriate in view of the nature and extent of the condition.
- (d) If the person notified pursuant to subsection (b) or (c) of this section fails to correct the condition as required by the notice prescribed in such subsection, except in cases of extreme emergency, the city manager may enter the property, **pursuant to an administrative warrant issued by the municipal court, and correct the condition and charge the costs of such correction, plus an additional amount of \$25.00 for administrative costs, to the owner** and to the lessee, agent, occupant, or other person in possession and control of the property. If any property owner fails or refuses to pay when due any charge imposed under this section, the city manager may certify due and unpaid charges, including interest, to the Boulder County Treasurer for collection, as provided in section 2-2-12, "City Manager May Certify Taxes, Charges, and Assessments to County Treasurer for Collection," B.R.C. 1981.

“Proper Wood Disposal”

- Chipped
- Hauled to landfill or wood recycling facility in NE Denver in covered vehicle
- Kept for woodworking if debarked and inspected
- Debarked and milled at local sawmill
- Could not keep for firewood; could not keep intact walnut logs





Denver Craigslist Postings (10/29/2009)

- I have a full truckload of black walnut wood from 3" dbh to 24" dbh they are cut approx. 4' long and the main stem of the tree is strait and still is 13 to 15' long. If you are interested please call.
- We have a straight, tall walnut tree, lost to disease, that needs to come down. We thought we'd offer it up to woodworkers before having it hauled off for firewood. If you're interested in paying part of the cost of removal (negotiable,) all this beautiful walnut is yours.
- For sale - 3 stunning walnut crotch slabs. 1 bookmatched set and one other sequential slab all from the same log. These were recently cut so they are still green, you buy green, you save a pile of green. \$800 for the bookmatched set, \$1,000 for all three. These are cut from an urban tree and were salvaged from the removal job. All are cut 3" thick, 7'6" long and range in width from 22" at the small end to 40" at the widest point. These would make a stunning dining room table, conference table, desk, headboard, or whatever you have in mind. The flame figure in the crotches is some of the nicest I've ever seen. When dry these slabs will easily fetch \$600-700 a piece. Buy 'em now, save money. Other walnut slabs and other species available.





Total # Trees and Costs

- Between 2003-2009, 900 black walnuts (188 public; 712 private) removed in Boulder (tracked)
- Many walnuts removed before tracking began
- Total value of walnut trees lost is \$3.5 million
- Forestry spent \$55,000 on removals; staff time unknown
- ~ 350 black walnuts remain in Boulder

Lessons Learned in Boulder...

Recommendations for Other Cities

- Discuss current Tree Ordinances with City Attorney; ensure broad enough to cover any epidemic insect or disease issue.
- City of Boulder adding language:
 - **Create arborist license**

“It shall be unlawful for any person to engage in the business of planting, pruning, removing or applying pesticides to any trees or shrubs on public or private property within the city for commercial gain or profit without first procuring an arborist license each year from the city manager.”

 - Any licensee must perform all related tree work in the city in accordance with rules, regulations, standards and specifications established by the city manager...
 - All motor vehicles and major equipment must be clearly identified...
 - Establish application, fees, testing, term and renewal procedures...
 - Set insurance requirements...
 - **Allow Criminal penalties for non-compliance**

“General Penalties: The penalty for violation of any provision of this chapter, rule or regulations promulgated under authority by the charter, this code or any ordinance of the city is a fine of not more than \$1000.00 per violation.”
 - **Allow City Manager or designee to adopt needed rules and regulations**

“City Manager Authorized to Issue Rules: The city manager may adopt rules and regulations that the manager determines are reasonably necessary to implement the requirements of this chapter.”

Lessons Learned in Boulder...

Recommendations for Other Cities

- Education is critical; centralized website, news releases, posters...
- Develop an Action Plan:
 - monitoring – timing, methodology
 - management - condemnations
 - inventory
 - budget impacts
 - staffing impacts
 - use of volunteers
 - tree replacements
- Front Range cities will soon adopt new management strategy
- Ultimately...these recommendations may help but TCD will be impossible to contain or control on a city level
 - Many cities do not have tree ordinances or enforcement capability
 - Time from initial infection to symptom expression too long
 - Walnut wood a commodity; cities cannot regulate/enforce interstate moving of wood
 - Budget cuts, staffing shortages, etc

Contact Information:

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